MEMORANDUM OF AGREEMENT

between the

UNITED STATES DEPARTMENT OF AGRICULTURE
UNITED STATES FOREST SERVICE

and the

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

REGARDING RECIPROCITY OF THEIR SAWYER TRAINING, EVALUATION, AND CERTIFICATION PROGRAMS

I. PARTIES

Agriculture (USDA), United States Forest Service (FS) and the United States Department of the Interior (DOI), National Park Service (NPS), collectively referred to as "the Agencies."

II. PURPOSE

The purpose of this MOA is to document agreement between the FS and NPS to grant reciprocity to each other's chainsaw and crosscut saw program ("saw program") and to accept training, evaluation, and certification conducted by the other agency for volunteers and cooperators. This agreement does not apply to chainsaw use in wildland firefighting operations.

III. STATEMENT OF MUTUAL BENEFIT AND INTERESTS

The FS and NPS rely heavily on volunteers and cooperators utilizing chainsaws and crosscut saws (saws) to achieve each respective agency's mission. Both the FS and NPS require saw operators to be trained, evaluated, and certified in accordance with specific requirements. After reviewing their saw programs as reflected in Attachment A and Attachment B, the FS and NPS have determined they are similar enough to accept the saw program training, evaluation, and certification conducted by the other Agency. Granting reciprocity to each other's saw program will improve efficiency in program administration, particularly in use of chain saws and crosscut saws, while continuing to ensure competency of operators on lands managed or areas administered by the Agencies.

IV. AUTHORITY

This MOA is executed under the following authorities:

A. Organic Administration Act, 16 U.S.C. § 551.

B. Organic Act of 1916, 54 U.S.C. §100101 et seq.

C. Occupational Safety and Health Act of 1970, Sections 6 and 19, 29 U.S.C. §§ 655 and 668.

D. Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.

V. RECIPROCITY OF THE AGENCIES' SAW PROGRAMS

The Agencies have reviewed each other's sawyer training, evaluation, and certification programs as reflected in Attachments A and B and agree that:

A. While the programs have different processes, the programs are similar, and both ensure the competency of operators.

B. Each Agency will accept the saw program training, evaluation, and certification conducted under the other Agency's program for individuals working under agreement for a volunteer partner or cooperator organization on lands managed or areas administered by each Agency.

C. Volunteers and cooperators operating a chain saw or crosscut saw on lands managed or areas administered by either Agency:

1. Must carry a valid FS National Sawyer Qualification Card or NPS National Chainsaw Safety Program Qualification Card; and

2. Must be affiliated with a volunteer or cooperator organization authorized to perform work involving use of a chain saw or crosscut saw under an agreement with the Agency that has management or administration responsibility over the land or area.

VI. GENERAL PROVISIONS

A. Principal Contacts. The principal contacts for this MOA are:

FS Contact	NPS Contact
Pete Duncan National Saw Program Manager Recreation, Heritage, and Volunteer Resources USDA-Forest Service o: 530-394-8100 c: 530-394-8100 pete.duncan@usda.gov	Daryl Avery Branch Chief, Occupational Safety and Health DOI-National Park Service c: 202-768-1490 daryl_avery@nps.gov

Any communications by the FS or NPS related to the matters covered by this MOA will be delivered in person, mailed, or transmitted electronically by e-mail or facsimile to the contacts identified above.

B. Conduct of Activities. The FS and NPS and their respective divisions and offices will handle their own activities and utilize their own resources, including the expenditure of their own funds, in pursuing the objectives of this MOA. Each Agency will carry out its separate activities in a coordinated and mutually beneficial manner.

C. Non-Fund-Obligating Document. Nothing in this MOA shall obligate either the FS or NPS to obligate or transfer any funds. Specific work projects or activities that involve the transfer of funds, services, or property among the various divisions and offices of the FS or NPS will require execution of separate agreements and be contingent upon the availability of appropriated funds. Such activities must be independently authorized by appropriate statutory authority. This MOA does not provide such authority. Negotiation, execution, and administration of each such agreement must comply with all applicable statutes and regulations.

D. Lack of Benefit to Members of Congress. Pursuant to 41 U.S.C. § 22, no member of or delegate to Congress may benefit from this MOA, either directly or indirectly.

E. Enforceability. This MOA is not intended to, and does not create, any right or benefit, substantive or procedural, enforceable at law or equity, by a party against the United States, its agencies, its officers, or any person.

F. Existing Authority. Nothing in this MOA is intended to alter, limit, or expand the Agencies' statutory and regulatory authority.

G. Participation in Similar Activities. This MOA in no way restricts either of the Agencies from participating in similar activities with other public or private agencies, organizations, and individuals.

H. Effective Date, Extension, Amendment, and Termination. This MOA takes effect upon the signature of the FS and NPS and shall remain in effect for five years from the date of execution. This MOA may be extended or amended upon written request of either the FS or NPS and the subsequent written concurrence of the other Agency. Either the FS or NPS may terminate this MOA with a 60-day written notice to the other Agency.

VII. SIGNATORIES

By signing below, the respective Agencies certify that the individuals listed in this MOA are their representatives and are authorized to act in their respective areas for matters related to this MOA.

GORDON BLUM Digitally signed by GORDON BLUM
Date: 2022.06.22 08:43:06 -05'00'

_____ _____

Gordon Blum Date
Acting Director
Recreation Heritage, and Volunteer Resources
United States Department of Agriculture
United States Forest Service

JENNIFER FLYNN Digitally signed by JENNIFER FLYNN
Date: 2022.06.06 13:11:21 -04'00'

_____ _____

Jennifer Flynn Date
Associate Director
Visitor and Resource Protection
United States Department of the Interior
National Park Service

ATTACHMENT A

NPS NATIONAL CHAIN SAW SAFETY POLICY

Chapter 15
Chainsaw Safety for Non-Wildland Fire Operations

15.1 Introduction

It is National Park Service (NPS) policy to provide a safe and healthful workplace for individuals performing chainsaw operations. The NPS Chainsaw Safety Program for Non-Wildland Fire Operators (NCSP) provides direction on qualifications, training, evaluation, and requirements for individuals operating chainsaws on all NPS lands. This program requires the verification and demonstration of skills and competencies to help ensure safe operation of chainsaws. NPS policy allows chainsaw use in the performance of NPS duties only if the chainsaw operator:

1. Successfully completed a competency evaluation.
2. Possesses a valid NPS Chainsaw Qualification.
3. Is verified by the project supervisor to meet any other specified qualifications to perform assigned chainsaw work.

15.2 Scope

This chapter applies to all individuals conducting activities, work, and operations on NPS lands that involves the use of chainsaws in non-wildland fire applications. The program consists of three components: a policy, a required qualification process, and optional comprehensive training.

1. The Chainsaw Operator Safety policy:
   a) Identifies training options to acquire chainsaw knowledge, skills, and abilities.
   b) Establishes minimum training requirements.
   c) Verifies chainsaw operator skills through an evaluation of identified competencies for the sawyer and faller operator classifications.
   d) Addresses safety practices, means, methods, and operations for chainsaw use, regardless of the purpose of cutting.

2. Any individual who operates a chainsaw in a non-wildland fire setting is required to comply with this NPS policy on chainsaw use in non-wildland fire settings and must be qualified, at minimum, at the sawyer skill level, in addition to any specialized training pertaining to their classification.

   NOTE: This policy does not pertain to chainsaw operators holding a current red-card qualification and are currently trained and qualified through National Wildfire Coordinating Group (NWCG).

3. Individuals currently qualified through the NWCG program as a Faller (FAL-3, FAL-2, or FAL-
   1) may perform chainsaw operations in a non-wildland fire setting provided they:
   a) Produce a current Chainsaw Operator qualification card upon request.
   b) Work within the limitations of their qualification.

4. Individuals that are not currently qualified as a chainsaw operator NWCG FAL-3, FAL-2, or FAL-1 must:
   a) Complete the e-course on non-wildland fire chainsaw use and NPS policy (required).

b) Complete risk management training, such as Operational Leadership (required).
c) Obtain their non-wildland fire chainsaw qualification as outlined in this policy.

5. Exceptions to this NCSP include:
   a) Non-NPS emergency responders.
   b) Contractors who are not working under direct NPS supervision.
   c) Lessees.

   These individuals/groups must ensure compliance with local, state, and federal occupational safety and health regulatory requirements, where applicable. If there is a necessity to use a chainsaw that could expose NPS staff or visitors to injury, or property to damage, individuals must first notify NPS administration and be granted permission to utilize chainsaws.

   NOTE: Specialty groups that have their own chainsaw training and qualification process may apply for an equivalency to the Advisory Board to exempt them from the NPS NCSP.

15.3 References

Detailed information for implementation is contained in the following references.

1. Occupational Safety and Health Administration (OSHA), 29 CFR 1910.266(e)(1) and (e)(2), Logging Operations.
2. OSHA, 29 CFR 1910.266 Appendix A, First Aid Kits (Mandatory).
3. OSHA, 29 CFR 1910.266 Appendix B, First Aid and CPR Training (Mandatory).
4. OSHA, 29 CFR 1910.266 Appendix C, Comparable International Organization for Standardization (ISO) Standards (Non-mandatory).
5. OSHA, 29 CFR 1910.106, Flammable Liquids.
6. American National Standards Institute (ANSI) Z133, Safety Requirements for Arboricultural Operations.

15.4 Definitions

This section includes a list of definitions relevant to chainsaw safety operations.

Name	Definition
After Action Review	A structured review or debriefed process by the participants and those responsible for the project or event to analyze what happened, why it happened, and how it can be done better in the future.
Approving Official	The person who provides authorization for individuals to be permitted to operate a chainsaw after they have successfully demonstrated competency to safely operate a chainsaw.
Brushing	The clearing out of a work area by removing woody material up to 4" in diameter, so long as it can be done safely with a simple horizontal cut.
Bucking	The process of reducing the size of fallen logs or trees by cutting the wood into moveable sections.
Chain Break	A device used to stop the saw chain.
Chainsaw	A portable mechanical saw consisting of a power head, saw chain, and guide bar generally used to cut wood.
Chainsaw Operation	Any number of tasks that involve the use of a chainsaw, in addition to other acts, to accomplish a specific job such as tree felling.
Chainsaw Operator	Any individual who uses a chainsaw in the performance of his/her duties.
Chainsaw Safety, Maintenance, and Operation	Comprehensive chainsaw training program that consists of training courses for each level of the NPS NCSP.
Competency	A measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics an individual needs to perform work roles or occupational functions safely and successfully.
Competency Evaluation	A written assessment of an individual's knowledge of chainsaws and/or a field evaluation of his/her skills and ability to operate a chainsaw safely.
Competency Evaluator	A qualified Chainsaw Operator who has met the required criteria of a Competency Evaluator as defined within this policy and/or NPS chainsaw safety training guidelines.
Danger Tree	A danger tree is often an uprooted, older, or rotting tree that has fallen into another tree. Also referred to as a hazard or hung tree.
Diameter at Breast Height (DBH)	A standard method of expressing the diameter of the trunk of a standing tree that is measured at a height of 4.5 feet (1.37 meters) from the uphill side of the tree.
Drop Starting	The act of starting a chainsaw by pushing the saw away from the body with one hand while simultaneously pulling on the starter cord handle with the other. Drop starting is prohibited.

Name	Definition
Effective Means of Communication	A method of communication that ensures a message is given, received, and understood. This includes: ● Verbal Command and Response. ● Established Visual and/or Audible Signals. ● Written – Must be clear & concise, legible, and written in a language the reader understands.
Electrical Conductor	Any overhead or underground electrical device capable of carrying an electrical current, including communications wires and cables, power lines, and other such fixtures or apparatus.
Engineering Control	Eliminate or reduce exposure to a chemical or physical hazard through the use or substitution of engineered machinery or equipment.
Equivalency Waiver	Partners or volunteer groups may request an equivalency waiver by submitting the completed application to the NPS Service-wide Chainsaw Safety Advisory Board. This application must be accompanied by a copy of the written program, training curriculum, and field competency assessment from the program the individual/group is currently certified under.
Fall (Fell)	To cut down trees using a face and back cut.
Faller	● Working Faller - A chainsaw operator who performs tree falling operations at the entry level. The Working Faller may fall simple trees defined as a single stem tree of moderate (approximately 16 inches) diameter, free of defects, with no more than 1 foot of lean in any direction, with adequate room for falling, and the diameter (DBH) of the tree does NOT exceed the (chainsaw) bar length. ● Journey Level Faller - A chainsaw operator who performs tree falling operations at an advanced level. The Journey Level Faller may fall any tree after careful consideration of the tree's complexity, provided it does NOT have a valued target and the diameter (DBH) of the trees does NOT exceed the 1.5 times the (chainsaw) bar length. ● Master Faller - A chainsaw operator who performs tree falling operations at an expert level using advanced techniques and specialized equipment (i.e. rigging, tree jack, etc.). The Master Faller may fall any tree after careful consideration of the tree's complexity.
Job Hazard Analysis (JHA)	A technique that focuses on job tasks as a way to identify hazards before they occur. JHA focuses on the relationship between the individual, the task, the tools, and the work environment.
Lessons Learned	Any knowledge or understanding that impacts an organization and is gained through experience. May be positive or negative.
Limbing	To cut branches off downed trees.
Logo	A segment such as a section, bolt, or tree length that is sawn or split from a felled tree.
Manual Tree Felling	The removal of a tree or tree trunk from the ground by incorporating a notch and back cut.

Name	Definition
Near Miss	A near miss is an unplanned event that did not result in injury, illness, or damage – but had the potential to do so. Only a fortunate break in the chain of events prevented an injury, fatality, or damage.
Operation (of a chainsaw)	The act of starting the engine, engaging the throttle, handling the chainsaw, placing the saw chain to material (i.e. wood) to make a cut, then turning off the engine at the completion of the task.
Qualified Chainsaw Operator	Any individual that successfully demonstrates their knowledge and ability to safely perform chainsaw operations at their evaluated skill level.
Risk Assessment	The process of determining the likelihood of a specified negative event occurring.
Safety Station	Set up within 100 feet of the work zone and contains a first aid kit suitable for the operation and associated crew size, a proven method of communication, and a site safety plan.
Sawyer	A chainsaw operator who only performs chainsaw operations on horizontal material from the ground (e.g. bucking, limbing, brushing, slashing, and stumping).
Site Safety Plan	Identifies physical address, latitude and longitude, GPS coordinates, or other physical location identifiers and name address and phone number of nearest medical facility. Outlines the best way to summons emergency medical services (EMS). May include a Medivac plan.
Skill Level	The level of achievement an individual possesses reaches by acquiring thorough knowledge of the subject and successfully demonstrating the ability to perform the action.
Slashing	The cutting of woody material so it lays flat on the ground.
Stumping	Vertical log material not exceeding 36 inches in height.
Target	Any person, property, or service (activity) that may be injured, damaged, or disrupted.

15.5 Responsibilities

This section addresses the responsibilities and requirements for all chainsaw safety and operator-related roles.

15.5.1 Washington Area Support Office (WASO) Office of Risk Management

The WASO Office of Risk Management is responsible for:

1. Maintaining the Policy and, when necessary, revising the policy.
2. Serving as a central repository for all completed training documentation (curriculum outline, field evaluations, and the official NCSP competency evaluator recommendation).
3. Serving as a central repository for the NCSP Instructor/Competency Evaluator Qualification documentation.
4. Receiving all waiver requests and coordinating review of waiver requests by the NCSP

Safety Advisory Board.

5. Coordinating the meeting of the NCSP Safety Advisory Board.
6. Coordinating a list of all approved NCSP Chainsaw Operators within the NPS.

15.5.2 Superintendent or Site Manager

The superintendent, site manager, or their designee is responsible for:

1. Ensuring compliance with all requirements set forth under this policy, including:
   a) Training requirements.
   b) Skill competencies.
   c) Safe work practices.
2. Appointing a Chainsaw Safety Program Manager within the park/office.
3. Ensuring chainsaw operators follow NPS chainsaw safety program requirements.
4. Performing an annual review to ensure compliance with this program.
5. Signing the chainsaw operator's qualification card as the authorized "Approving Official." Signatures are based on receiving the recommendation from the NCSP Competency Evaluator stating that the individual has successfully met the competency qualification requirements set forth by this policy.
6. Ensuring supervisors maintain individuals' training and qualification records and can produce the records upon request.

15.5.3 First Line Supervisor

Supervisors are responsible for:

1. Ensuring that an individual is designated as a "qualified chainsaw operator" (for the specific skill level at which he/she is assigned to perform).
2. Ensuring documentation (training rosters, agenda, etc.) of training is maintained.
3. Reporting and investigating all near misses and incidents resulting in injury or property damage according to NPS and Department of the Interior (DOI) policy as well as OSHA regulations (see chapter section Incident Reporting and Investigation). The supervisor (or designee) must create a Lesson Learned paper from the investigation and submit it to the Regional Risk Management Office.
4. Ensuring all assigned chainsaw operations are within an operator's skill level.
5. Monitoring individuals' development and taking further training action, where needed, to ensure the needs of the organization are met.
6. Ensuring all chainsaw operator qualification cards, CPR and First Aid Certification Cards, and bloodborne pathogens awareness/universal precautions training are current.
7. Reviewing the use of personal protective equipment (PPE).
8. Conducting and documenting tailgate safety meetings to include a review of JHAs for all staff prior to the start of each workday and prior to daily operations that merit additional safety.
9. Taking corrective actions if any unsafe practices are observed.

10. Tracking the number of qualified operators, completed chainsaw-related projects, and identifying accident and near miss trends.
11. Reporting results of review and recommendations to the superintendent or site manager and regional risk manager, as appropriate.
12. Reviewing recordkeeping procedures to determine that up-to-date and accurate records are kept including reviewing job hazard analyses, safety, and tailgate meeting records.

15.5.4 Chainsaw Safety Program Manager

The Chainsaw Safety Program Manager may be a defined role at a park/office level as well as at a regional level. This program manager is responsible for serving as the primary point-of-contact (POC) at the park/office level for the chainsaw safety program. As delegated by the superintendent or site manager, the Chainsaw Safety Program Manager may support or assist the superintendent or site manager in his/her duties. At the regional level, the program manager will help coordinate training and maintain records of qualified operators within the region.

15.5.5 Chainsaw Operator

Operators are responsible for:

1. Maintaining the correct tools and accessories in good repair before starting any chainsaw operation.
2. Protecting equipment and tools from damage during transport or use.
3. Notifying their first-line supervisor of any chainsaw operation they are not comfortable performing or that is above their ability to perform.
4. Notifying the first-line supervisor of all chainsaw safety related incidents including injury, property damage, near miss, and danger trees.
5. Maintaining records of their own required training and qualification/re-qualifications completed.
6. Presenting verification of current certification in first aid, CPR, and bloodborne pathogens (BBP) awareness/universal precautions training to their first-line supervisor (or volunteer coordinator if in the Volunteers-In-Parks (VIP) program), NCSP Instructor and/or NCSP Competency Evaluator. Note: BBP awareness training is generally a core component of first aid training.

15.5.6 NCSP Instructor

The NCSP Instructor is responsible for:

1. Conducting NPS-approved Chainsaw Safety, Maintenance & Operations (CSMO) training. This curriculum includes knowledge of CSMO and skills development through hands-on training.
2. Maintaining their competency evaluation status in accordance with the NCSP.

15.5.7 NCSP Competency Evaluator

The NCSP Competency Evaluator is responsible for:

1. Verifying that individuals completed the required NPS Chainsaw Operator e-course, a formal Risk Management training course (e.g.,16-hour operational leadership course), and are certified in CPR, standard first aid, and have a current training record (e.g., certificate, course roster) that verifies bloodborne pathogens awareness/universal precautions training was a component of the individual's first aid training.
2. Administering an approved written exam and/or field competency assessment to test the individuals' skills and ability to safely operate a chainsaw independently (at the specific level for which they are being evaluated).
3. Providing constructive feedback to any individual that fails to demonstrate their ability to safely operate a chainsaw. The evaluator may recommend a student complete the NPS CSMO Training course or equivalent training to further enhance their chainsaw operator competency. The goal of this feedback is to help the individual gain the necessary skills to pass future competency requirements.

   NOTE: NCSP Competency Evaluators are limited to evaluating operator skills at or below their own qualification level.

4. Completing and signing the NPS Official Chainsaw Safety Competency Evaluator Recommendation Form (see Appendix B), the NCSP Qualification Card, and the NCSP Competency Evaluation Field Assessment Form as the "Evaluator" for each individual they evaluate.
5. Forwarding the NPS Official Chainsaw Safety Competency Evaluator Form to the appropriate "Approving Official", superintendent, site manager, or their designee.
6. Maintaining their competency evaluation status in accordance with the NCSP.
7. Submitting electronic copies of the completed NPS Official Chainsaw Safety Competency Evaluator Form to the WASO Office of Risk Management.

15.5.8 Regional Risk Manager/Regional Occupational Safety and Health Manager

The Regional Risk Manager/Occupational Safety and Health Manager or the Regional Director's designee for Chainsaw Safety Program Manager is responsible for:

1. Providing chainsaw program guidance and support to parks/offices in their region.
2. Providing guidance in the application of NPS and DOI policy as well as the Occupational Safety and Health (OSH) Act of 1970 and 29 CFR 1910, "Occupational Safety and Health Standards," in the management of the chainsaw safety program.
3. Coordinating NCSP Competency Evaluator and CSMO Instructor training and qualification and refresher training for their region.
4. Coordinating special teams of Safety Managers, Collateral Duty Safety Coordinators (CDSCs), and chainsaw subject matter experts (SMEs) to investigate all incidents

resulting in significant personal injury and/or property damage (see Incident Reporting and Investigation below).

NOTE: Accidents that meet the threshold established for Serious Accident Investigations will follow requirements established by DM 485 and RM 50B Accident Investigations.

5. Reviewing all lessons learned, Safety Management Information System (SMIS) reports, and other documents resulting from incidents or near misses involving chainsaw operations.
6. Ensuring this information is communicated to appropriate parties, including park superintendents, site managers, safety managers, CDSCs, other regional field personnel, and WASO Office of Risk Management to prevent future similar occurrences.
7. Maintaining a current contact list of regional NCSP Competency Evaluators and CSMO Instructors and make readily available to the field.

15.5.9 NCSP Service-Wide Advisory Board

The NCSP Service-Wide Advisory Board is responsible for:

1. Providing clear guidance and direction for complying with the program.
2. Reviewing equivalency waiver applications to determine denial or approval of the waiver request. This application must be accompanied by a copy of the written program, training curriculum, and field competency assessment from the program the individual/group is currently qualified under (e.g., United States Forest Service, Appalachian Trail Conservancy Training, etc.).
3. Performing an annual review of the policy, qualification process, and optional CMSO Training program.

15.6 Program Elements

This section describes the basic program elements for chainsaw safety operations.

15.6.1 Training

Training for instructors, NCSP competency evaluators and chainsaw operators is a critical component to the NCSP.

1. **Prerequisites.** All candidates for chainsaw operator qualifications must complete the following mandatory prerequisites:
   a) The mandatory NPS Chainsaw Operators e-Course prior to the competency evaluation.
   7. Be certified in CPR, standard first aid, and have current training in bloodborne pathogens awareness/universal precautions training. Note: BBP training is generally a core component of first aid training.
   b) Formal Risk Management training course (e.g., NPS 16-Hour Operational Leadership) Note: Volunteers and partners in the National Historic and Scenic Trails Parks may use the Trail Safe! Program to satisfy this requirement.

2. **Chainsaw Competency Qualifications.** Anyone operating a chainsaw in the performance of their duties must first be qualified through the NCSP program. The primary purpose for the NCSP qualification is to address a chainsaw operator's safety (and the safety of individuals in the vicinity of saw operations) by confirming the operator has met the competency requirements and successfully completed a written and field competency assessment.

   It is imperative that the chainsaw qualification and re-qualification process adequately evaluates potential operators on both the principles of chainsaw operation and the operator's proficiency in implementing those principles. All potential chainsaw operators must meet the minimum qualifications and be knowledgeable in safe chainsaw operation and equipment parts/function/maintenance and safety.

   Chainsaw operators may perform chainsaw operations outside the limits of their qualification to develop or improve their skills and abilities ONLY when they are under the direct supervision of a higher qualified Operator.

   a) At a minimum, all individuals who operate chainsaws for the NPS must be:
      - At least 18 years of age.
      - Certified in CPR, standard first aid, and trained in bloodborne pathogens awareness/universal precautions.
      - Evaluated on the required chainsaw operator competency requirements as set forth in this chapter.

   c) All chainsaw operators must complete the NPS Chainsaw Operator e-course (one-time requirement) and a formal Risk Management training course such as the 16-hour Operational Leadership course Operational Risk Management training (one-time requirement). Note: Volunteers and partners in the National Historic and Scenic Trails Parks may use the Trail Safe! Program to satisfy this requirement.

   b) The NPS CSMO training course or equivalent training course must be completed if the individual does not already possess the knowledge and skills required. All chainsaw operators who successfully complete competency evaluations are still encouraged to complete the NPS CSMO training course to further enhance skills and abilities.

      NOTE: Individuals may choose not to complete the NPS CSMO training course if they already possess the appropriate knowledge and skills.

   c) All chainsaw operators must successfully demonstrate proficiency at their current skill level to perform chainsaw operations.

   d) The NCSP Competency Evaluator must submit documentation to the operator's superintendent or site manager, or their designee to sign as the "Approving Official." Once signed, the documentation is forwarded to the operator's supervisor. Official evaluation of an operator's skill level and proficiency must be conducted every three years.

e) Qualified chainsaw operators must comply with applicable OSHA, ANSI, NPS, and park/office policies regarding chainsaw operation at all times.

NCSP chainsaw operator skill levels include:

a) Sawyer – Anyone who operates a chainsaw in a non-wildland fire setting must, at a minimum, have this level of qualification. Operators who perform non-routine chainsaw operations (i.e., law enforcement officer, carpenter, etc.) must first obtain the sawyer skill level qualification in addition to any other requirements for their position.
b) Faller – Any person qualified to operate a chainsaw as a (tree) Faller. There are three classes of Faller:
   - Working Faller (entry level).
   - Journey Level Faller (advanced level).
   - Master Faller (professional level).

   NOTE: Before achieving the faller qualification, an operator must achieve qualification at the sawyer level first.

15.6.2 Written Chainsaw Safety Program

Each Park/Office will develop a written Chainsaw Safety Program in which each operating unit will provide clear expectations and guidance on who the policies cover, and the defined roles and responsibilities established by the program. The following are basic components of a written chainsaw safety program.

1. **Requirements.** Each park/office will create a JHA that lists:
   a) Prior to Tasks to be performed.
   b) Potential hazards associated with the tasks.
   c) Controls for each potential hazard identified for all chainsaw operations.

   Refer to RM50B chapter on JHAs.

2. **Risk Analysis.** Prior to beginning each chainsaw operation/task, the crew/operator must perform a risk analysis using the Operational Leadership Severity/Probability/Exposure (OL SPE) analysis, or similar model, to determine a task rating of:
   a) Low risk.
   b) Moderate risk.
   c) High risk.

3. **Training.** Each qualified operator must have received proper training in chainsaw:
   a) Compliance.
   b) Safety.
   c) Complexity assessment.
   d) Maintenance.
   e) Operation (use).

4. **Handling and Operating a Chainsaw.** When handling and operating a chainsaw:
   a) Qualified Operators must use PPE at all times. Tables 2 and 3 provide the required and recommended PPE per the level of task complexity.
   b) Smoking, vaping (e-cigarettes), and the use of any open flames are prohibited.
   c) Operators must have prior qualification or be under the direct supervision of a higher qualified operator in a training environment. Working under the direct supervision of a qualified operator is not meant to circumvent the requirement for all operators to obtain qualifications.
   d) Incidents resulting in damage, injury, or more serious consequences will be promptly investigated, reported, and reviewed using recognized accident investigation techniques. See Incident Investigation and Reporting section below.
   e) Operators must never work alone. At a minimum, a co-worker must be within line-of-site of the chainsaw operator at all times, who:
      - Is aware of the chainsaw operation underway.
      - Periodically checks on the chainsaw operator.
      - Is certified in CPR and standard first aid when medical response is not within close proximity (3-4 minutes).
      - Can provide assistance to the operator in the event of an emergency.
   f) Prior to chainsaw operations beginning, the operators must notify dispatch or someone in the park/office management position of the location and/or vicinity of the chainsaw operation.
   g) Each operation must include a “safety station” within 100 feet of the work zone that contains:
      - A first aid kit suitable for the current chainsaw operation and associated crew size. Appendix A provides a list of the minimally acceptable number and type of first aid supplies for first aid kits required under paragraph (d)(2) of the logging standard. (29 CFR 1910.266(e)(1) and (e)(2), Logging Operations)
      - Must establish a tested method of communication (e.g., two-way radio, cell phone, or satellite phone) to contact EMS. In remote operations, a backup communication method must be determined and tested prior to remote work.
      - A “site safety plan” that identifies the physical address, latitude and longitude, GPS coordinates, or other physical location identifiers of the work site; a recommended way to summon EMS; a Medivac plan (for rural or back country chainsaw operations) to include identification of a landing zone should one be needed; and the name, address, and phone number of the nearest medical facility.
   h) Equipment may not be operated within 10 feet (3.05 meters) of refueling operations or in areas where refueling recently occurred.
   i) All persons other than qualified line-clearance arborists and qualified line-clearance arborist trainees must maintain a minimum approach distance of 10 feet to electrical conductors.

j) Chainsaws may not be operated unless the manufacturer's safety devices are in proper working order. Chainsaw safety devices may not be removed or modified.
k) Drop-starting a chainsaw is prohibited. A chainsaw must be started with the chain brake engaged and the operator holding the saw firmly in a manner that minimizes movement of the saw when pulling the starter handle.
l) The chain brake must be engaged or the engine shut off if it is carried more than two steps.
m) In manual tree felling operations, non-involved individuals must be beyond twice the height of the tree or trunk being removed.

   NOTE: This requirement does not apply in the presence of site restrictions, such as waterways or cliffs. Other individuals must be beyond a tree's striking range and at a distance as close to twice the tree's height as practical.

n) In manual tree felling operations, notches (face cuts) must be used on all trees and trunks greater than 5 inches (12.7 centimeters) in DBH.
o) When more than one individual is limbing or bucking a tree, each is positioned and their duties organized so the actions of one individual will not create a hazard for the other individual.
p) Effective communication methods must be established before beginning a chainsaw operation.
q) Chainsaw engines must be started and operated at a 10-foot minimum distance from other individuals.
r) Proper use and storage of chainsaw liquid fuel is important to protecting safety. Gasoline will be stored in approved containers or Department of Transportation (DOT) approved containers in quantities of 5 gallons or less. "Approved" containers are tested and certified by a nationally recognized testing laboratory (NRTL) such as Underwriters Laboratory (UL) or Factory Mutual Engineering Corp (FM). Approved containers will be marked or labeled with the UL or FM label. A safety can is a common type of approved container with a flash arresting screen, spring-closing lid and spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure.

15.6.3 Personal Protective Equipment

The intent of PPE is to protect an individual from injury or illness when a hazard cannot be controlled through engineering controls or other more suitable methods. Consider the following guidelines when selecting PPE to be used when operating a chainsaw:

1. Operators must wear the required PPE at all times while operating a chainsaw and may use additional recommended PPE for added protection.
2. A park/office program may impose more stringent PPE requirements than those listed in the tables below if it is determined a specific task warrants an added level of protection. However, care must be taken not to create an additional hazard to the operator with the

added PPE.

3. Occasionally, the use of specific PPE may increase the probability of injury or illness. When this occurs, the operator may be exempted from using the PPE in question, provided the operator:
   a) Clearly demonstrates to their supervisor that such a condition exists.
   b) Employs a suitable safety control method.
4. Each chainsaw operation must undergo a risk assessment (RA) to determine the operation's complexity level. This RA helps to identify the minimum PPE requirements (as stated in the tables below). Recommended PPE is also found in the tables.
5. The tables list required and recommended PPE based on the operation's risk level (low risk [green], moderate risk [amber], or high risk [red]), similar to the NPS Operational Leadership Green, Amber, Red (GAR) RA process. The crew/operator determines the risk level during the RA, which is completed prior to the start of the task.

Refer to the RM50B chapter on PPE for additional guidance.

Table 2: PPE Requirements and Recommendations for Low Risk and Moderate Risk Chainsaw Operations

Required Equipment	Recommended Equipment
• Head Protection: Hard hat that complies with ANSI Z89.1 and is based on type of hazard present • Eye Protection: Safety glasses/goggles that comply with ANSI Z87.1 • Hearing Protection: Ear muffs/plugs, or a combination of both, are required • Leg Protection: Cut-resistant chaps/pants that extend 2 inches over boots and meets or exceeds ASTM F1897 or the USFS 6170-4F specifications • Foot Protection: Sturdy leather work boots which provide protection for the foot • Single use latex or nitrile gloves, face shields or masks, eye protection, pocket masks (Note: For Operators Designated as Emergency Responders)	• Foot Protection. Safety-toed or cut-resistant boots which protects the foot • Hand Protection: Gloves • Arm Protection: Long sleeve shirt • Face Protection: Face shield • High Visible Clothing: Vest/Shirt/Jacket • Blood Stopper: Personal first aid trauma dressing kit (worn on body) • Safety Whistle with established protocol

Table 3: PPE Requirements and Recommendations for High Risk Chainsaw Operations

Required Equipment	Recommended Equipment
• Head Protection: Hard hat that complies with ANSI Z89.1 and is based on type of hazard present • Eye Protection: Safety glasses/goggles that comply with ANSI Z87.1 • Hearing Protection: Ear muffs/plugs, or a	• Head Protection: Hard hat that complies with ANSI Z89.1 with chin strap • Hand Protection: Gloves • Arm Protection: Long sleeve shirt • Face Protection: Face shield

Required Equipment	Recommended Equipment
combination of both, are required • Leg Protection: Cut-resistant chaps/pants that extend 2 inches over boots and meets or exceeds ASTM F1897 or the USFS 6170-4F specifications • Foot Protection: Safety-toed or cut-resistant boots which protects the foot • High Visible Clothing: Vest/Shirt/Jacket • Blood Stopper: Personal first aid trauma dressing kit (worn on body) • Safety Whistle with established protocol • Single use latex or nitrile gloves, face shields or masks, eye protection, pocket masks (Note: For Operators Designated as Emergency Responders)	

15.6.4 Qualification Process

The following section details the qualifications of each type of NPS chainsaw operator and evaluator.

1. **Chainsaw Operators.** Candidates seeking a chainsaw operator qualification must:
   a) Acquire the chainsaw competencies identified under this policy for the specific qualification level. Individuals may obtain their chainsaw competencies through the:
      - NPS CSMO comprehensive training program.
      - NWCG Wildland Fire Chainsaws S-212 program.
      - Other government agency training programs.
      - External training programs.
      - On-the-job experience.

      NOTE: Candidates possessing the required chainsaw competencies may have their skills evaluated without additional chainsaw training.

   b) Complete the required e-course NPS Chainsaw Policy and Use, DOI-NPS-1504-DOIU, available on the Department of Interior Learning Management System.
   c) Provide a copy of their completion certificate for a formal Risk Management training course.
8. Maintain current certification in first aid and CPR, and current training in bloodborne pathogens awareness/universal precautions. Note: BBP awareness training is generally a core component of first aid training.
   d) Have their chainsaw competencies (for the specific level of operation) evaluated by a qualified NCSP Competency Evaluator. Evaluations consist of a written exam to verify the individual's knowledge of CSMO and/or a field competency assessment to demonstrate their ability to safely operate a chainsaw. The type of evaluation varies

for each level. Specifically:

- Sawyer Level: Evaluation consists of a written test and field assessment.
- Working Level Faller: Evaluation consists of a field assessment only.
- Journey Level Faller: Evaluation consists of a written test and field assessment.
- Master Level Faller: Individual must complete a taskbook.

NOTE: The Master Level Faller taskbook is self-paced and includes a variety of tasks demonstrating skills. Over time, an individual will demonstrate the skills by performing tasks while a qualified Master Level Faller observes the individual performing the tasks. Upon successful completion of each task, the observer will sign off the tasks in the taskbook.

Upon successful completion of the competency evaluation:

a) Candidates receive an approval from the NCSP Competency Evaluator based on demonstrated knowledge, skill, and performance.
b) The NCSP Competency Evaluator forwards the qualification recommendation to the candidate's superintendent or site manager, or their designee for signature, which finalizes the qualification process.
c) The Chainsaw Operator qualification is valid for a three-year period but may be subject to review any time prior to expiration.

NOTE: Chainsaw Operator qualification at the sawyer-skill or faller-skill levels does NOT qualify an individual to perform chainsaw operations outside their skill or qualification level.

d) To maintain qualification at the same level, three-year re-evaluation and qualification requirements include:
    - A competency re-evaluation (written exam and/or field assessment).
    - Current certification in first aid and CPR, and bloodborne pathogens awareness/universal precautions training .

2. **NCSP Instructor/Competency Evaluator.** An NCSP Instructor/Competency Evaluator provides instruction of the (optional) comprehensive CSMO chainsaw training program to individuals needing to develop knowledge and skills in safe chainsaw operation. In addition, they evaluate an individual's chainsaw competencies by administering the NCSP Competency Evaluation.
    a) To qualify as an NCSP Instructor/Competency Evaluator for all levels of non-wildland fire, they must:
        - Be at least 21 years of age.
        - Provide a copy of their certificate of completion in a formal Risk Management training course.
        - Provide a copy of their current certification in CPR and standard first aid, and bloodborne pathogens awareness/universal precautions training.

- Have a minimum of three years active chainsaw experience. Active experience is defined as performing 40 hours of chainsaw operation per year at the level for which the individual is seeking qualification. This must be verified by the operator's supervisor or some other form of documentation (e.g., chainsaw NCSP qualification card).
- Successfully complete the NCSP Instructor/Competency Evaluator course.

b) NCSP Instructor/Competency Evaluator qualification is valid for a period of three years.

c) To re-qualify as an NCSP Instructor/Competency Evaluator, he/she must submit a ***Qualification Training & Recertification Record*** (see Appendix C) and supporting documents to their Regional Risk Manager/Regional Occupational Safety and Health Manager (also known as the Regional Chainsaw Program Manager) showing that they have, at a minimum:
   - Instructed one training course per year (total of three courses).
   - Administered 10 competency evaluations within the three-year period.
   - If qualification lapses, they can petition the NCSP Regional Instructor Trainers for requalification.

3. **NCSP Instructor-Trainer.** An NCSP Instructor-Trainer provides instruction of the NCSP Instructor/Competency Evaluator training course and qualifies chainsaw operators as NCSP Instructor/Competency Evaluators.
   a) To qualify as an NCSP Instructor-Trainer for all levels of non-wildland fire, the individual must:
      - Be currently qualified as an NCSP Instructor/Competency Evaluator.
      - Successfully complete the NCSP Instructor-Trainer distant learning course (four hours).
   b) NCSP Instructor-Trainer qualification is valid for a period of three years.
   c) To re-qualify as an NCSP Instructor-Trainer, he/she must submit a ***Qualification Training & Recertification Record*** (see Appendix C) and supporting documents to their Regional Risk Manager/Regional Occupational Safety and Health Manager (also known as the Regional Chainsaw Program Manager) showing that they have, at a minimum:
      - Instructed one training course per year (total of three courses). Courses can be either the NCSP Instructor/Competency Evaluator course or the NCSP CSMO course.
      - Administered 10 competency evaluations within the three-year period.

4. **NCSP Regional Instructor-Trainer.** An NCSP Regional Instructor-Trainer performs the duties of an NCSP Instructor-Trainer, provides instruction of the various NCSP program levels (training and competency evaluation), and qualifies NCSP Instructor-Trainers & NCSP Instructor/Competency Evaluators for their region.

a) To qualify as an NCSP Regional Instructor-Trainer for all levels of non-wildland fire, they must:
   - Be currently qualified as an NCSP Instructor/Competency Evaluator.
   - Successfully complete the NCSP Instructor-Trainer distant learning course (four hours).
   - Be evaluated by a current NCSP Regional Instructor-Trainer or by the NCSP service wide instructor team.

b) NCSP Regional Instructor-Trainer qualification is valid for a period of three years.

c) To re-qualify as an Regional NCSP Instructor-Trainer, he/she must submit a ***Qualification Training & Recertification Record*** (see Appendix C) and supporting documents to their Regional Risk Manager/Regional Occupational Safety and Health Manager (also known as the Regional Chainsaw Program Manager) showing that they have, at a minimum:
   - Instructed one training course per year (total of three courses). Courses can be either the NCSP Instructor/Competency Evaluator course or the NCSP CSMO course.
   - Administered 10 competency evaluations within the three-year period.

15.6.5 Revocation

Revocation processes are initiated by the first-line supervisor and approved by the park/office superintendent/manager. Revocation of NCSP operator qualification may occur when:

1. An operator has failed to demonstrate appropriate operational procedures resulting in placing themselves or others in danger.
2. An operator lacks the physical ability to safely undertake cutting activities commensurate with their qualification.
3. The review of chainsaw-related accidents and near misses reveals the operator was acting outside of their qualification.

15.6.6 Incident Reporting and Investigation

For more information on NPS incident investigation, and OSHA recordkeeping and reporting, please refer to the appropriate RM50B chapters.

15.7 Technical Appendices

Appendix A: Mandatory First Aid Kit Supplies

Appendix B: Chainsaw Operator Competencies

Appendix C: NCSP Competency Evaluator Form

Appendix D: CSMO Instructor and NCSP Competency Evaluator Qualification Record

Appendix A: Mandatory First Aid Kit Supplies (29 CFR 1910.266 Appendix A)

The following list sets forth the minimally acceptable number and type of first aid supplies for first aid kits required under paragraph (d)(2) of the logging operations standard (29 CFR 1910.266). The contents of the first aid kit listed should be adequate for small work sites, consisting of approximately two to three individuals. When larger operations or multiple operations are being conducted at the same location, additional first aid kits should be provided at the work site or additional quantities of supplies should be included in the first aid kits:

1. Gauze pads (at least 4 x 4 inches).
2. Two large gauze pads (at least 8 x 10 inches).
3. Box adhesive bandages (band-aids).
4. One package gauze roller bandage at least 2 inches wide.
5. Two triangular bandages.
6. Wound cleaning agent such as sealed moistened towelettes or bottles of sterile water.
7. Scissors.
8. At least one blanket.
9. Tweezers.
10. Adhesive tape.
11. Latex gloves.
12. Resuscitation equipment such as resuscitation bag, airway, or pocket mask.
13. Two elastic wraps.
14. Splint.
15. Directions for requesting emergency assistance.

Appendix B: Chainsaw Operator Competencies

Competency: Sawyer

To be fully competent at this level, the candidate:

1. Assesses the complexity level of horizontal trees.
2. Uses a chainsaw to complete:
    a. Bucking.
    b. Limbing.
    c. Brushing.
    d. Slashing.
    e. Construction operations.
3. Adheres to all safety and performance standards (NPS policies, ANSI and OSHA standards) while performing Sawyer duties.
4. Performs proper maintenance of the saw to keep it in good working order.

Competency Criteria for the Sawyer Level

Description Level	Sub-Competency	Criteria
Operators achieving the Sawyer qualification may perform chainsaw operations on horizontal material from the ground (bucking, limbing, brushing, and slashing).	Safety	**Regulatory Understanding** Understands what OSHA and ANSI are and how they relate to chainsaw operation. **Personal Protective Equipment** Selects, wears, inspects, and maintains the proper PPE needed to perform chainsaw operations. **Emergency Preparedness** Participates in the preparation of the JHA and Emergency Action Plan. **Communication** • Understands the terminology used to describe all operations performed at this level. • Communicates effectively with team. **Situational Awareness** • Understands the potential dangers associated with chainsaw use. • Maintains situational awareness while performing chainsaw operation using the principles of risk management.
Same as above	Assessment	• Assesses the environment for potential hazards, avoids hazardous conditions, or corrects conditions that can be made safer. • Assesses the material to be cut and determines the appropriate cutting techniques to avoid hazardous situations. • Assesses the overall cutting situation to determine its complexity.

Same as above	Operations	• Starts and stops a chainsaw following industry standards and manufacturers recommendations. • Performs bucking, limbing, brushing, and slashing operations on horizontal trees commensurate to the operator's experience level. • Identifies and mitigates reactive forces while performing chainsaw operation. • Identifies and mitigates present forces while performing chainsaw operation. • Handles the chainsaw correctly utilizing proper body position, employing proper ergonomics.
Same as above	Maintenance	Selects, identifies, and performs proper maintenance on the chainsaw and all other tools and equipment used at this level.

Competency: Working, Journey Level, and Master Tree Fallers

Tree falling is a procedural process that requires:

1. Assessment and preparation of the felling site, work area and tree.
2. Execution of the felling cuts to safely land a tree in the desired location (lay).
3. Knowledge of safety, communication, chainsaw operations, and tree falling.

Working Faller (WF)

Working Fallers must possess the competencies of a Sawyer (S) in addition to those listed below.

Competency Criteria for the Working Faller Level

Description Level	Sub-Competency	Criteria
• Operators achieving the WF qualification may fall simple trees defined as any straight, single trunk tree, up to a moderate (approximately 16 inches) diameter, free of defects, with adequate room for falling. The diameter of the tree must NOT exceed the (chainsaw) bar	Safety	**Attitude** Understands the purpose of the mission and does not proceed without clearly defined objectives. **Personal Protective Equipment** Selects, wears, inspects, and maintains the proper PPE needed to perform chainsaw tree felling operations. **Emergency Preparedness** • Participates in the preparation of the JHA and Emergency Action Plan. • Prepares safety equipment for field operations commensurate with location and complexity of operations. • Knows and can demonstrate emergency response procedures including communications equipment operation and

Description Level	Sub-Competency	Criteria
length. • Considered an entry level Tree Faller position where individuals develop and refine their basic tree falling skills.		limitations. **Communication** • Understands the terminology used to describe all operations performed at this level. • Communicates effectively in a team environment. • Serves as a coach/mentor to saw crew members at Sawyer level. **Situational Awareness** • Analyzes the work area and identifies potential dangers associated with chainsaw tree falling. • Maintains situational awareness while performing chainsaw tree falling operations using the principles of risk management.
Same as Above	Assessment (Size Up)	• Assesses the environment for potential hazards, avoids hazardous conditions, or corrects conditions that can be made safer. • Sizes up the material to be cut and determines appropriate felling techniques (felling plan) to achieve intended lay and avoid hazardous situations. • Assesses the overall cutting situation to determine its complexity in relation to the operator's comfort level and experience. • Follows the process of accepting or rejecting the falling complexity base on size up.
Same as Above	Operations	• Establishes appropriate work area, commensurate with tree size, potential impact on nearby trees, planned escape routes, and limits of the work area to other personnel and the public. • Utilizes appropriate size chainsaw, axe, and wedges to make standardized directional felling cuts and safely fall the tree along the intended lay. • Maintains safety control through falling execution.
Same as Above	Maintenance	Selects, identifies, and performs appropriate maintenance of the chainsaw and all other tools and equipment used at this level.

Journey Faller (JF)

Journey Fallers must possess the competencies of a WF in addition to those listed below.

Competency Criteria for the Journey Faller Level

Description Level	Sub-Competency	Criteria
• Operators achieving the JF qualification may fall any tree they are comfortable sawing, provided it does not require any specialty equipment, does not have a high value target, and the diameter of the tree does not exceed 1.5 (chainsaw) bar lengths. • Considered an advanced level Tree Faller position where individuals develop and refine their skills falling complex trees.	Safety	**Attitude** Has additional experience and knowledge and mentors S and WF in increasingly complex situations. **Personal Protective Equipment** Same as WF. **Emergency Preparedness** Same as WF. **Communication** Same as WF. **Situational Awareness** Same as WF.
Same as Above	Assessment (Size Up)	• Demonstrates ability to recognize and evaluate the environment, the tree, the overall complexity of the cutting situation, and the ability to properly execute the fall within this complexity level/skill set. • Demonstrates the knowledge to decline assignments based on size-up and skill level.
Same as Above	Operations	• Uses the same communication protocols, work area controls, and tool practices of the WF. • Demonstrates ability to use advanced falling techniques, holding wood manipulation, and knowledge of physics to safely fall more complex trees. • Performs cuts that exceed the bar length (not more than 1.5 times). • Understands and demonstrates hung up tree mitigation methods, types of cuts, and safety challenges. • Demonstrates knowledge and ability to evaluate and fall trees up to 45 degrees off natural lean. • Demonstrates ability to use a simple falling aid to safely influence the direction of the tree fall. • Leads and mentors S and WF in more advanced assignments.

Description Level	Sub-Competency	Criteria
Same as Above	Maintenance	• Selects, identifies, and performs advanced maintenance of the chainsaw and all other tools and equipment utilized at this level. • Troubleshoots simple chainsaw problems in the field. Advanced skills in chainsaw maintenance including tuning, adjustments and chain performance. • Demonstrates knowledge and ability to use specialty tools to support higher complexity tasks.

Master Faller (MF)

Master Fallers must possess the competencies of a JF in addition to those listed below.

Competency Criteria for the Master Faller Level

Description Level	Sub-Competency	Criteria
• Operators achieving a MF qualification may fall any tree they are comfortable sawing, after careful consideration of the tree's complexity. • Considered an expert level Tree Faller position where individuals develop and refine their skills using advanced techniques and/or specialized equipment	Safety	**Attitude** • Has superior experience and knowledge and mentors S, WF, and JF in increased complexity situations. • Knows their limitations and seeks additional knowledge/skills when warranted. **Personal Protective Equipment** Same as WF and JF. **Emergency Preparedness** Same as WF and JF. **Communication** Same as WF and JF. **Situational Awareness** Same as WF and JF.
Same as Above	Assessment (Size Up)	• Recognizes and evaluates the environment, the tree, the overall complexity of the cutting situation, and the ability to properly execute the fall within this competency level/skill set. • Demonstrates the knowledge and willingness to refuse an assignment, consult a more qualified specialist, or recommend other measures to mitigate extraordinary safety threats or extreme complexity. • Briefs individuals and develops a work plan, including rigging techniques, to gain mechanical advantage for ground-based falling operations.
Same as Above	Operations	• Uses the same communication protocols,

Description Level	Sub-Competency	Criteria
		work area controls, and tool practices of the WF and JF. • Uses advanced falling techniques, holding wood manipulation, and has sufficient knowledge of physics to safely fall highly complex trees. • Employs advanced mitigation methods for highly complex hung-up trees. • Evaluates and falls trees to an appropriate direction off natural lean. • Properly uses ground-based rigging techniques and/or machinery to gain pulling and lifting mechanical advantage to safely influence the direction of fall. • Leads and mentors S, WF, and JF in more advanced assignments.
Same as Above	Maintenance	• Selects, identifies, and performs advanced maintenance of the chainsaw and all other tools and equipment utilized at this level. • Troubleshoots more complex chainsaw problems in the field. • Performs advanced chainsaw maintenance including tuning, adjustments, and chain performance. • Inspects and maintains all falling and rigging tools and equipment.

Appendix C: NCSP Competency Evaluator Form

NCSP CHAINSAW SAFETY PROGRAM

OFFICIAL COMPETENCY EVALUATOR FORM

Purpose: NCSP Chainsaw Safety Program Competency Evaluators must complete Parts A - C for each individual seeking qualification as a NCSP chainsaw operator. A copy of this completed form must be submitted to the individual's superintendent or site manager.

Date: [INSERT DATE]

To: [INSERT SUPERINTENDENT/SITE MANAGER NAME], [INSERT NPS PARK/OFFICE NAME]

From: [INSERT NAME OF COMPETENCY EVALUATOR]

Subject: Chainsaw Operator Competency Evaluation for [INSERT INDIVIDUAL'S NAME]

Initial Qualification Level (check one):

- ☐ Sawyer
- ☐ Working Faller
- ☐ Journey Level Faller
- ☐ Master Faller

OR

Three Year Re-Certification Level (check one):

- ☐ Sawyer
- ☐ Working Faller
- ☐ Journey Level Faller
- ☐ Master Faller

[INSERT INDIVIDUAL'S NAME], [INSERT DIVISION AND JOB TITLE], [HAS OR HAS NOT] successfully completed the chainsaw safety competency evaluation for the qualification skill level checked above.

Part A: Written Examination and Field Competency Assessment

Written Exam Score: [INSERT SCORE]

Field Competency Assessment Score: [INSERT SCORE]

Master Level Faller Taskbook Completion: [INSERT DATE]

Part B: Proficiency Evaluation (Check one box)

	Individual has successfully demonstrated the knowledge, skills, and ability necessary to operate a chainsaw independently – chainsaw operator qualification at stated level is recommended.
	Individual requires additional training. Participant may operate a chainsaw under the direct supervision of a qualified operator while receiving additional training.
	Individual has NOT successfully demonstrated the skills necessary to operate a chainsaw. Participant should attend additional training to build the required skills before operating a chainsaw.
Notes/ Details	

Part C: Verification of Required Training

Courses/Certification	Completion Date
First Aid/CPR/BBP *Certification cards and training record must be current.*	[INSERT DATE]
NPS chainsaw safety operator e-Course *One-time requirement for initial qualification only.*	[INSERT DATE]
NPS CSMO training course *Recommended, not required.*	[INSERT DATE]
Risk Management training *Required.*	[INSERT DATE]

_____

Name of NPS Chainsaw Safety Competency Evaluator

_____

Signature

Appendix D: NCSP Instructor and/or Competency Evaluator Qualification Record

Qualification Training and Re-Certification Record for (choose one):

NCSP Instructor OR Competency Evaluator

Name: _____

Skill Level: _____

Training/Qualification Activity	Date Achieved	Renewal Date
Risk Management		None
NPS Chainsaw Safety e-course		None
First Aid/CPR/BBP		
Chainsaw Operator Qualification		
CSMO Instructor Qualification		
Competency Evaluator Qualification		

Documented Annual Experience: NCSP Instructor and Competency Evaluators must perform a minimum of 40 hours of "active" chainsaw experience per year to maintain their qualification.

Year 1 – Total Hours: _____

Date	Activity/Hours	Witness	Phone Number

Year 2 – Total Hours: _____

Date	Activity/Hours	Witness	Phone Number

Year 3 – Total Hours: _____

Date	Activity/Hours	Witness	Phone Number

NCSP Instructor and Competency Evaluator Record: To requalify as a NCSP Instructor and/or Competency Evaluator, the below criteria must be met within a three-year period:

- A NCSP Instructor is required to instruct at least one course per year.
- A Competency Evaluator is required to administer a written test and evaluate chainsaw competencies for a minimum of 10 individuals.

Course Title (for Instructors) **– OR- Written/Field Assessment** (for Evaluators)	**Date**	**Location**	**Number of Attendees**	**Number of Qualifications Recommended** [For Competency Evaluators Only]	**Number of Qualifications NOT Recommended** [For Competency Evaluators Only]

This completed record should be submitted for re-qualification of NCSP Instructor and/or Competency Evaluator.

ATTACHMENT B

FS NATIONAL SAW DIRECTIVES

USDA FOREST SERVICE
SAW OPERATIONS GUIDE

2016 Electronic Edition

v 1.3.1

July 14, 2016

Table of Contents

Acknowledgements

This guide is compiled by the USDA Forest Service (FS) Saw Program Technical Advisory Group (TAG) and derived from recognized industry standards, procedures and practices, as well as appropriate related material contained in Federal standards, Forest Service policy and current training manuals[1].

[1] The Forest Service, United States Department of Agriculture (USDA), has developed this information for the guidance of its employees, volunteers, training consultant, and partners, and is not responsible for the interpretation or use of this information by anyone except its own employees. The use of trade, firm, or corporation names in this document is for the information and convenience of the reader, and does not constitute an endorsement by the Department of any product or service to the exclusion of others that may be suitable.

Chapter 1 Introduction

1.1 Purpose

The purpose of this guide is to define common terms and definitions and identify implementation standards for chain saw and crosscut use by Forest Service employees, volunteers, training consultants and cooperators. The FS Saw Program is designed to protect sawyers from accidental injury, illness or death during saw operations.

This guide describes operational procedures to implement policy found in FSM 2358 and are considered the best practices for this activity.

The FSSOG is outside of formal Forest Service policy and resides on the TAG SharePoint site to allow for the timely dissemination of safety information, equipment and technique updates. Contact your Regional Saw Program Manager for recommendations of additions or changes.

1.2 Scope

This guide provides operational information for the use of chain saws or crosscut saws by Forest Service employees, including volunteers, training consultants and cooperators.

For the purposes of this guide, the terms “saw” or “saw program” shall refer to both chain saws and crosscut saws, unless specified otherwise.

1.3 Goals

- Provide information that will protect sawyers from injury or mishap when operating saws while performing their official duties.
- Provide information on the safe use, handling, and transport of saws in the workplace.
- Provide information on felling, limbing and bucking operations when using saws.

1.4 Authority

1. Occupational Safety and Health Act of 1970, Sections 6 (29 U.S.C. 655) and 19 (29 U.S.C. 668).

2. Executive Order 12196. Occupational Safety and Health Programs for Federal Employees.

3. Title 29, Code of Federal Regulations: Part 570, subpart E; Part 1910.95; Part 1910.132; Part 1910.151; Part 1910.242; Part 1910.266; Part 1960.

4. Forest Service Manual (FSM) 2358 Saw Program.

5. Forest Service Handbook (FSH) - 6709.11, Health and Safety Code Handbook; 1509.11, Grants, Cooperative Agreements, and Other Agreements Handbook.

1.5 National Saw Program Technical Advisory Group (TAG)

The TAG provides multidisciplinary expertise in saw operations. The TAG consists of the National Saw Program Manager, Regional Saw Program Managers, a representative from the Forest Service

Technology and Development Program, other federal agency (as of 2016 BLM and NPS) saw and safety-related subject matter experts. The purpose of the TAG is to develop, coordinate and provide advice and guidance about training, skills, and safety for all aspects of saw operations to the National Saw Program Manager. In particular, the TAG reviews and recommends Nationally Recognized Sawyer Training Courses (NRSTCs) to the National Saw Program Manager.

Table 1-TAG Member 2016

Name	Region	Specialty	Title	Contact
Jake Long	1	Crosscut	Technical Program Coordinator	jacoblong@fs.fed.us 406.677.3920
Todd Wilson	1	Chainsaw	Technical Program Coordinator	tiwilson@fs.fed.us 406.827.0711
Dave Hamrick	2	Chainsaw/Crosscut	Program Coordinator	gdhamrick@fs.fed.us 970.295.6780
Lisa McClure	2	Crosscut	Program Coordinator	lmcclure@fs.fed.us 719.657.6019
Tony McWilliams	3	Chainsaw/Crosscut	**Chair** - Program Coordinator	tjmcwilliams@fs.fed.us 575.682.5326
Patrick Brown	4	Crosscut	Program Manager	pjbrown@fs.fed.us 208.634.0659
Robert Burnside	4	Chainsaw	Program Coordinator	rburnside@fs.fed.us 208.587.7961 x7150
Pete Duncan	5	Chainsaw	Program Coordinator	Pduncan01@fs.fed.us 530.394.8100
Mitch Hokanson	5	Crosscut	Program Coordinator	mhokanson@fs.fed.us 530.226.2888
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1.6 Partner, Cooperator, or Volunteer Training Program Review:

1. Revise, align or review existing cooperative agreement(s) to meet standards in FSM 2358.03 (3)

2. Develop training package and/or certification standards to meet the standards identified in FSM 2358

    a. Develop a table listing the authorities and any delegations necessary similar to FSM 2358.04 Exhibit 01. These authorities must align with language found in the FSM 1580 agreement (FSM 1509.11 sec. 91.2).

    b. Describe responsibility of each position within the organization's saw program similar to FSM 2358.04a-2358.04m.

    c. All Partners, Cooperators, or Volunteers that receive approval for new training courses/programs will be required to use the National Sawyer Certification Database when it becomes available.

    d. Definitions for critical terms must be developed if they differ from those found in FSM 2358.05.

    e. Follow or develop similar qualification standards identified in FSM 2358.06, 2358.1 Exhibit 02 and 2358.3 Exhibit 06.

    f. Follow or develop similar responsibilities and limitations, training, knowledge and skills to meet each skill level identified in FSM 2358.1.

    g. Follow or develop similar sawyer training and field proficiency evaluation standards identified in FSM 2358.2.

    h. Follow or develop similar revocation procedure identified in FSM 2358.22.

    i. Follow or develop similar program monitoring and evaluation procedures identified in FSM 2358.3.

    j. Follow or develop similar sawyer evaluation forms identified in FSM 23358.3 Exhibit 03 and 04.

    k. Develop an incident and accident tracking and notification system.

3. How the TAG reviews submitted NRSTCs

    a. The National Saw Program Manager is the main contact for partners, cooperators and volunteers submission of NRSTCs for review by the TAG

    b. The TAG will select a subcommittee to review each submittal and make recommendations to the National Saw Program Manager

4. Approval

    a. The National Saw Program Manager is the responsible authority that will approve each NRSTC that meets the qualifications in FSM 2358

1.7 Terms and Definitions

Advanced Teaching Method or Technique - A method or technique for teaching adult learners that takes into consideration different learning abilities, motivations, and life experiences.

American National Standards Institute (ANSI) - is a private non-profit organization that oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States.

A Sawyer (NWCG Equivalent FAL3)- An apprentice sawyer who may saw only in the least complex situations or, for training purposes, at the next higher level and in either case only under the immediate supervision of a B or C Sawyer qualified to supervise the work (FSM 2358.1, ex. 02).

Backcut – The final cut in a felling operation.

Barberchair – Vertical split of a tree during felling procedure. Commonly a result of improper undercutting and/or backcutting, associated with a heavy forward leaning tree characterized by a portion of the fallen tree left on the stump.

B Sawyer – Bucking Only - (not applicable in the fire management context) - An intermediate Sawyer who may independently buck and limb any size material in moderately complex situations and who may saw at the next higher level, but only under the immediate supervision of a sawyer qualified to supervise the work (FSM 2358.1, ex. 02).

B Sawyer – Felling and Bucking. An intermediate sawyer who may independently fell, buck, and limb any size material in moderately complex situations. This person may saw at the next higher level under the immediate supervision of a sawyer qualified to supervise the work (FSM 2358.1, ex. 02). This person may also conduct classroom and field training for A and B Sawyers with prior written approval from the Saw Program Coordinator.

Bind – The two major components of bind are compression and tension. The directional pressures of compression and tension determine the sawing technique and procedure used to release them.

Boring – Method of using the bottom half of the guide bar tip to saw into the tree while felling or bucking.

Brush - Any vegetation less than 5 inches diameter at breast height (DBH).

Brushing - Removing brush and shrubs, either during fire line construction or while clearing out a work area.

Bucking - Sawing logs and limbs into shorter lengths.

Bumper Spikes (Dogs) – Metal spikes mounted on a chain saw near the guide bar designed to stabilize and support the chain saw during felling and bucking.

C Sawyer – Bucking Only (not applicable in the fire management context). An advanced sawyer who may independently buck and limb any size material in highly complex situations based on the Regional Saw Program Manager's or Saw Program Coordinator's written recommendation. The recommendation must be supported by demonstrated advanced saw knowledge, skills, and in most cases certification as a B Sawyer (FSM 2358.1, ex. 02). This person may conduct classroom and field training within that person's skill level for A and B Sawyers, and may conduct field proficiency evaluations within that person's skill level for A Sawyers and B Sawyers – Bucking Only.

C Sawyer – Felling and Bucking. An advanced sawyer who may independently fell, buck, and limb any size material in highly complex situations based on the Regional Saw Program Manager's or Saw Program Coordinator's written recommendation. The recommendation must be supported by demonstrated advanced saw knowledge, skills, and in most cases certification as a B Sawyer (FSM 2358.1, ex. 02). This person may conduct classroom, field training, and proficiency evaluations for A and B Sawyers.

C Sawyer Evaluator. An advanced sawyer who may independently fell, buck, and limb any size material in highly complex situations based on the Regional Saw Program Manager's written recommendation. The recommendation must be supported by the successful completion of training on organizing and conducting advanced sawyer evaluation sessions in the field, demonstrated advanced saw knowledge and skills, and in most cases certification as a C Sawyer – Felling and Bucking for at least 3 years (FSM 2358.1, ex. 02). This person may conduct classroom, field training, and proficiency evaluations for sawyers at all certification levels.

Cat Face – A scar at the base of a tree caused by injury, rot or fire.

Certification. Confirmation a sawyer meets applicable training and field proficiency requirements and can competently saw at the identified skill level by a certifying official based on the requisite sawyer evaluator recommendation.

Certifying Official - The Regional Forester, Forest Supervisor, District Ranger, or, with delegated authority, the Regional Saw Program Manager or Saw Program Coordinator who confirms that a sawyer meets applicable training and field proficiency requirements and can competently saw at the identified skill level based on the requisite Sawyer Evaluator recommendation.

Chain Brake - Safety device that stops rotation of the chain.

Chain Saw - Any power saw that runs on gasoline or electricity and that utilizes a guide bar and chain, other than a power pole saw.

Complex or Complexity. A characterization of the cutting situation that determines the level of sawyer certification needed based on the tree species and crown, amount of material, size, lean,

binds, condition of the fiber, topography, stability, and any other factors that will affect the sawing operation.

Compound Cut – An angled bucking cut.

Cooperator. An individual or entity that voluntarily enters into a challenge cost share, participating, collection, or other agreement with the Forest Service to work on a project under FSM 1580.5 and FSH 1509.11, section 91.2, other than another agency working with the Forest Service on fire management activities (FSH 1509.11, ch. 50).

Crew Leader - The person who conducts immediate supervision of a saw crew and who reports its progress and any problems to the first-line supervisor, if that person is not also the crew leader (FSH 6709.11).Crosscut Saw - Any of various styles of handsaws operated by one or more persons to fell timber or cut logs manually, other than a bow saw, pruning saw, or brush saw.

Crosscut Saw. Any of various styles of handsaws operated by one or more persons to fell timber or cut logs manually, other than a bow saw, pruning saw, or brush saw.

Crosscut Sawyer Trainee - A sawyer who performs crosscut bucking tasks as part of on-the-job training, but only under the immediate supervision of a B or C Crosscut Sawyer.

Cutting Area - The area that may be affected by the direct or indirect actions of the sawyer and the material being cut.

DBH – Diameter of the tree at breast height (typically 4’-6”)

Danger Tree - A standing tree that presents a hazard to personnel due to conditions such as deterioration, or physical damage to the root system, trunk, stem, or limbs or the direction or lean of the tree (29 CFR 1910.266(c); FSH 6709.11, glossary).

Dutchman – Result from the two cuts of an undercut not meeting (bypass).

Domino Felling – The partial cutting of multiple trees, which are left standing and then pushed over with a driver tree. Domino felling is prohibited.

Drop Start – Starting the saw by dropping an unsupported saw with one hand while pulling the starting cord with the other hand. Drop starting is prohibited.

eSafety - The Forest Service mandatory use injury and illness reporting and recording application.

Escape Route – A predetermined route of exit used by sawyers when felling or bucking. The essential components of an escape route are selection of the desired direction and distance, prior to felling or bucking, and a well cleared route through which to escape to a safe area.

Evaluation - A determination in the certification process by a Sawyer Evaluator that indicates whether a sawyer is proficient in the safe use of a saw in the field and that is documented using the "Sawyer Training and Field Proficiency Evaluation" form (FSM 2358.3, ex. 03 and 04).

Evaluator - C Sawyer or C Certifier who actually observes the task(s) being performed and documents sawyer field evaluation/reevaluation performance. See Saw Field Proficiency Evaluation form (FSM 2358.3 Exhibits 03 and 04).

Felling - Safely cutting down a tree, including making a series of cuts that causes a tree to fall to the ground.

First-Line Supervisor. An employee who is responsible for the planning and implementation of a saw project that involves one or more other employees, who typically verifies the other employees' time and attendance records for the project, and who may also be the crew leader for the project.

Forest Service Approved – An item that meets Forest Service specifications and/or drawings, or is procured under Forest Service authority.

Formal Instruction - Instructor-led sawyer training in a classroom, online, or field setting that includes, at a minimum, an NRSTC.

FSH – Forest Service Handbook.

FSM – Forest Service Manual.

Formal Instruction - Instructor-led sawyer training in a classroom, online, or field setting that includes, at a minimum, a nationally recognized sawyer training course.

Guide Bar – Extension of saw that supports and guides the saw chain.

Gunning – Technique of aligning the gunning mark of a chain saw or the handles of a crosscut saw with the desired falling lay.

Hanging Wedges – A pair of metal wedges, tied together with a lanyard or cord for use with crosscut saws.

Hinge Wood/ Holding Wood – Section of wood located between the undercut (face) and the back cut that directs where the tree will fall. The hinge prevents the tree from separating from the stump until it is committed to the lay.

Immediate Supervision - On-site supervision with a clear view and control of the sawing operation that allows the supervisor to warn, advise, or assist the sawyers being supervised, when needed.

Instructor - A competent sawyer with the specialized skill to conduct training within their skill level if approved by the Forest/Zone/Sub-unit Saw Program Coordinator. Additionally, instructors assist training to their level of expertise. This definition may include volunteers and training consultants designated by the Forest Service. See FSM 2358.1 (including Exhibit 02) for further information.

Job Hazard Analysis (JHA) - A systematic process for the identification of safety and health hazards associated with a project or activity and the development of abatement actions for those hazards. The resulting documentation (using form FS-6700-7 or its equivalent) specifies required procedural and personal protective equipment, qualifications, training, safety practices, and emergency evacuation procedures for that project or activity.

Kerf – Space resulting from a saw cut.

Kickback – A strong thrust of the saw back toward the sawyer resulting from improper use of the tip of the guide bar or pinching of the bar in a cut.

Knowledge Training - Training method(s) using approved curriculum that includes, but not limited to, a group: lecture, multi-media presentation, flip charts, discussion, demonstrations, written tests, and question and answers. Training may be accomplished in the field or an indoor setting.

Lean – Refers to the directional tilt of a tree away from its vertical position in relation to the intended lay of the tree. Many times two lean forces may be in play in the same tree. Lean is described as head lean, back lean and side lean.

Limbing - Cutting branches off a tree.

Line Officer - Any employee who carries out line authority (FSH 6709.11.05).

Lodged Tree (hung tree) - A tree leaning against another tree or object which prevents it from falling to the ground. Hung tree removal is considered a complex cutting operation and should be carefully planned **PROCEED CAREFULLY AND CONSIDER OTHER REMOVAL METHODS** as an option for safe removal.

National Fire Protection Association (NFPA) - A United States trade association, albeit with some international members, that creates and maintains private, copyrighted, standards and codes for usage and adoption by local governments.

Nationally Recognized Sawyer Training Courses (NRSTCs) - A training course that satisfies the formal instruction requirements for a particular level of sawyer certification (FSM 2358.1, ex. 02). The National Saw Program Manager maintains a list of approved courses.

Currently approved courses:

- NWCG, Wildland Fire Chain Saws S-212
- MTDC, Chain Saw and Crosscut Saw Training Course
- Soren Eriksson's Game of Logging curriculum

National Sawyer Certification Card - The certification card issued by the Forest Service or a cooperator to a sawyer that qualifies the sawyer to work on all NFS lands (FSM 2358.3, ex. 05). This card is issued to all sawyers, sawyer instructors, and sawyer evaluators upon the successful completion of training and field evaluation.

Off Side – The opposite side of the tree from where the sawyer stands while bucking or felling and is often the side of the tree or log where hazards have been identified.

PPE – Personal Protective Equipment.

Occupational Safety and Health Administration (OSHA): An agency of the United States Department of Labor. OSHA's mission is to "*assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance*".

Qualified Sawyer - A sawyer who has been certified in compliance with FSM 2358.06.

Reactive Forces – 1. Push-back - Cutting with the top of the bar will push the saw back toward the sawyer. 2. Pull in – cutting with the bottom of the bar will pull the saw away from the sawyer. 3. Kickback – Cutting with the top quarter of the bar nose will cause the tip of the saw to thrust up or sideways toward the sawyer.

Reevaluation - Confirmation a sawyer still meets applicable training and field proficiency requirements and can competently saw at the identified skill level by the certifying official based on the requisite sawyer evaluator recommendation.

Regional Program Instructor (RPI) - Individuals holding current C Sawyer Certifier Advanced Sawyer Certifier Certification, who have demonstrated communication skills, the ability to transfer and relate concepts to others and current working knowledge of policy and regulations pertaining to saw use, saws and related equipment. Regional Program Instructors may be delegated by the Region/Station/Area Saw Program Managers to qualify and sign cards for, applicants who have successfully completed the training requirements as C Certifiers.

Risk Assessment (RA) – A risk assessment is an objective identification and evaluation of threats to employee safety. Level of risk (high, moderate or low) is determined by the probability that a hazard, danger or threat will occur and how severe the consequences are if it does.

Saw Operations - Any activity using a chain saw or crosscut saw.

Sawyer - The primary operator of a saw.

Sawyer Evaluator - A C Sawyer or C Sawyer Evaluator, including a volunteer or Training Consultant, who determines as part of the certification process whether a sawyer is proficient in the safe use of a saw in the field and who documents that determination using the Sawyer Training and Field Proficiency Evaluation form (FSM 2358.3, ex. 03 and 04).

Sawyer Instructor - A Qualified Sawyer, including a volunteer or Training Consultant, who has the requisite skill to conduct or assist with training at the sawyer's skill level and who has received written approval to conduct that training from the Saw Program Coordinator (FSM 2358.1, ex. 02).

Sawyer Trainee (Crosscut only) – A person who has not had formal training (see Nationally Recognized Sawyer Training Courses). May occasionally serve as the second person on the end of a crosscut saw in a double buck situation or as a single buck. No felling. **Sawyer Trainees may not use a crosscut saw unless under immediate supervision of a (B or C) crosscut sawyer**.

Situation Awareness - An individual's perception of a given situation that results from an ongoing process of gathering and integrating information by observation and communication with others.

Skill Training - Training method(s) using approved curriculum that includes but not limited to hands-on demonstration. Skill training is usually held in an outdoor or field setting, using tools and equipment required for learning.

Snag – Any standing dead tree or remaining standing portion thereof.

Specialty Saw Use - Any use of a saw requiring additional training beyond the requirements of the NRSTCs, such as using a saw in a tree canopy or using a saw to mill lumber.

Spring pole – A tree, segment of a tree, limb, or a sapling, which is under stress or tension due to the pressure or weight of another object. A spring pole is potentially dangerous until properly mitigated.

Stump Analysis - The process of examining the stump of a tree to determine how the tree was cut.

Stump Shot - The height difference between the horizontal cut of the undercut (face, or notch) and the back cut. The difference in height establishes an anti-kick-back step that will prevent a tree from jumping back over the stump toward the faller.

Swamper – Individual(s) directly assisting a sawyer.

Trainee - A sawyer working to gain skills for a higher qualification level.

Training Consultant. A professional sawyer instructor or sawyer evaluator who supplements Forest Service sawyer instructors or sawyer evaluators and who is deemed qualified in writing by the Regional Forester to instruct and evaluate sawyers at all certification levels. The qualification determination is based on the written recommendation of the Regional Saw Program Manager or someone who is deemed qualified in writing by the Regional Saw Program Manager, acting with delegated authority (FSM 2358.01, ex. 01).

Tree – Any vegetation with a bole greater than 5" DBH.

Underbuck - Tool used when bucking, to hold a crosscut saw in position when the saw is cutting from underneath the log.

Undercut – A notch cut in a tree to guide the direction of fall.

Volunteer - A person who gives time and talent to advance the mission of the Forest Service and who receives no salary or wages from the Forest Service for that service, including for purposes of this section sponsored volunteers and international volunteers as defined in FSM 1830.5.

Wedge – A plastic or metal tool used to assist the sawyer to prevent a tree from falling backwards, lift the tree to redistribute its weight, or to prevent the bar from pinching while bucking.

Widow-Maker – a loose limb or debris lodged in a tree, which may fall on anyone working beneath it.

Work Leaders - Individuals involved in day-to-day immediate supervision of field personnel. Work leaders report the progress and problems of their personnel to the first-line supervisor (FSH 6709.11).

1.8 Qualification

All sawyers must be trained, evaluated, and certified through a training program that meets the intent of FSM 2358.03 Policy. Sawyers must have a current National Sawyer Certification Card and meet any other specified qualifications to perform assigned saw work, including currency in first aid CPR training when engaged in sawing activities. The National Sawyer Certification Card is issued with a three-year expiration date, which can be subject to review any time prior to expiration.

Chapter 2 Personal Protective Equipment (PPE)

Maintain PPE in a clean and fully functional condition (see FSH 6709.11, 21.13).

Table 2-Non-fire PPE requirements for saw use

PPE	Chain Saw Operations	Crosscut Saw Operations
Hard Hat	Hard hat or cutting helmet meeting ANSI Z89.1	Same as chain saw
Safety Glasses	ANSI Z87.1 (clear safety glasses, at a minimum) or equivalent (mesh "bug-eye" type or mesh face shield type) (OSHA 1910.266(d) (1) (vii) (B) Note)	Same as chain saw
Hearing Protection	Hearing protection required for gasoline powered chain saw use	None required
Gloves	Gloves or chain saw mitts are required for all chain saw operations. Leather required for sharpening. Alternative style of gloves may be used for inclement weather conditions, based on JHA.	Same as chain saw
Shirt, Pants[2]	Long sleeved shirt and long pants	Long sleeved shirt and long pants.
Leg Protection	Chaps or cut-resistant pants for chain saw use shall meet the requirements of Forest Service 6170-4 or ASTM F-1897 (current version). Chaps shall overlap boots at least 2".	None required
Boots	Cut-resistant or leather, laced 8 inch (204mm) high boots that provide ankle support and nonskid soles (hard toes are optional). OPTIONAL-Use JHA to determine proper footwear for the environment and/or related tasks.	Cut- resistant or leather, laced boots that provide ankle support and nonskid soles (hard toes are optional). Use JHA to determine proper footwear for the environment and/or related tasks..
Specialized PPE	Wear additional PPE as identified by local conditions, safety data sheets (SDS), or JHA/RA	Same as chain saw

Table 3-Fireline PPE requirements for saw use[3]

PPE	Chain Saw Operations	Crosscut Saw Operations
Hard Hat	Hard hat meeting NFPA 1977	Same as chain saw
Safety Glasses	ANSI Z87.1 (clear safety glasses, at a minimum) or equivalent (mesh "bug-eye" type)	Same as chain saw
Hearing Protection	Hearing protection required for gasoline powered chain saw use	None required
Gloves	Leather gloves are required for all chain saw operations and sharpening.	Same as chain saw
Shirt, Pants	Nomex® long sleeved shirt and Nomex® long pants	Same as chain saw
Leg Protection	Chaps meeting the requirements of Forest Service specifications 6170-4. Chaps shall overlap boots at least 2".	None required
Boots	Leather, laced 8 inch (204mm) high boots with nonskid soles	Leather, laced 8 inch (204mm) high boots with nonskid soles

[2] Short sleeved shirts may be used based on a JHA

[3] See FSH 6709.11 ch. 25.12

PPE	Chain Saw Operations	Crosscut Saw Operations
Specialized PPE	Wear additional PPE as identified by local conditions, safety data sheets (SDS), or JHA/RA	Same as chain saw

Chapter 3 Saw Equipment and Handling Requirements

3.1 Chain Saw, Guide Bar and Saw Chain[4]

1. Required Features
   a. Functional throttle trigger interlock that prevents the throttle from engaging unless the interlock is depressed on the handle.
   b. Functional anti-vibration system.
   c. Functional chain brake.
   d. Functional chain catch pin.
   e. Functional spark arrestor screen.
   f. Proper length bar and power head sized for the specific sawing project or activity
   g. Properly filed and maintained chain that is appropriate for the sawyer's certification level and the specific sawing project or activity. For example, a reduced kickback chain is appropriate for less experienced sawyers. Longer bars and chisel or full/semi- skip chain is appropriate for more experienced sawyers.
   h. Bar guard that is adequate to cover the muffler, chain, and bumper spikes when the saw is carried on the shoulder.
   i. Scabbard that is adequate for carrying the saw at the side.
2. Recommended Features
   a. Bumper spikes ('*dogs*') for felling and bucking operations.
   b. Full wrap around handle bar or ¾ wrap around handle bar for felling operations.
3. Required Additional Equipment
   a. First aid kit that meets OSHA standards[5].
   b. Chain saw bar wrench.
   c. Chain file with handle and guard.
   d. Approved safety container for chain saw fuel.
   e. Proper wedges for the specific work project or activity (wooden wedges are not permitted).
   f. A 3 to 5 pound single bit axe for driving wedges. Custom tools (pounders) are not acceptable.
4. Optional Additional Equipment
   a. Pruning saw.
5. Handling
   a. Carry the saw in a way to prevent contact with the chain, hot muffler, or bucking spikes. Carry the saw on the downhill side. Walk last in line if you are the person carrying the saw.
   b. When carrying a chain saw on your shoulder, take extra care due to the sharpness of the chain and 'dogs'. Cover the bar, chain and dogs. Wear a long-sleeved shirt, gloves, and a shoulder pad. Use of a manufactured bar and chain guard is recommended.
   c. Set the chain saw at idle speed and activate the chain brake before taking more than two steps or taking one hand off a running chain saw.

[4] Use and maintain according to the manufacturer's recommendations including matching proper guide bar and saw chain to the powerhead.
[5] OSHA 1910.266 Appendix A

d. Shut off the saw when carrying it for a distance greater than from tree to tree or in hazardous conditions, such as slippery surfaces or heavy underbrush, and, in all cases, when carrying it more than 100 feet.
e. Refer to FSH 6709.11, sec 12.2 and 12.5 and the Technology and Development Program Fuel Transport website, for further direction on equipment requirements for vehicles and for transporting saws and fuel.

6. Starting[6]
   a. Always inspect the saw before each use.
   b. Engage chain brake prior to starting.
   c. Start the saw on the ground, or where otherwise firmly supported. (It is acceptable to start the saw with the bar on a branch or log if the tip of the bar extends over supporting object).
   d. Do not "drop start" a chain saw.
7. Operation
   a. Maintain a secure grip on the saw at all times.
   b. The chain saw shall be held with the thumbs and fingers of both hands encircling the handles during operation.
   c. The sawyer shall be certain of footing before starting to cut. The chain saw shall not be used in a position or at a distance that could cause the sawyer to become off-balance, to have insecure footing, or to relinquish a firm grip on the saw.
   d. In general, throttle up to full speed before letting the chain contact the wood. In general, do not throttle down before the cut has been completed.
   e. Do not cut with power head above shoulder height.
   f. Clear away brush or other potential obstacles that might interfere with cutting or using the escape route.
8. Fueling
   a. Review owner's manual fueling process.
   b. Choose an outdoor fueling area at least 20 feet from an open flame or other sources of ignition.
   c. Wear safety glasses meeting ANSI Z87.1.
   d. **If saw exhibits low fuel, vapor lock characteristics, check fuel level through opaque side of fuel tank before opening fuel tank cap**.

Be wary of tank pressure if tank is more than ½ full

   e. Fuel from the upwind side to reduce exposure to spilled fuel and vapors.
   f. Allow saw to cool at least 5 minutes before opening fuel cap.
   g. Clean debris away from fuel/oil tank openings.
   h. To avoid any possible pressurized fuel spray, assume fuel tank is pressurized and direct fuel cap in a safe direction before slowly opening and to release built up fuel tank pressure.
   i. Fill the tank on bare ground or other noncombustible, grounded surface.
   j. Immediately clean up spilled fuel.
   k. Start the saw at least 10 feet from the fueling area.

[6] The methods to safely start and operate a saw can vary with the model and size; follow manufactures recommendations. The following basic precautions generally apply regardless of the saw model

l. Select an area with bare ground for storing fuel and oil.

3.2 Crosscut Saw

1. Required Features
   a. Proper length for the sawing project or activity
   b. Proper type, tooth pattern and length of saw for task that is also properly sharpened and set
   c. Handles
   d. Sheath
2. Required Additional Equipment
   a. A first aid kit that meets OSHA standards[7].
   b. Proper wedges for the specific work project or activity (wooden wedges are not permitted).
   c. A 3-5 pound single bit axe for driving wedges. Custom tools (pounders) are not acceptable.
3. Optional Additional Equipment
   a. A double bit axe
   b. Crosscut saw lubricant
   c. An under-buck tool
   d. A pair of hanging wedges
   e. A pruning saw
   f. Digging tools
4. Handling
   a. Vehicle
      i. When transporting saws in a vehicle secure them from movement and guard teeth (sheath or box).
   b. Pack animal
      ii. When transporting a crosscut saw on a pack animal, take extra care. Adequately guard and secure the saw.
      iii. Select the most gentle, experienced animal to carry the saw, based on the discretion of the packer.
      iv. Carry short saws sheathed, guarded, or in a scabbard, and positioned in a manner so that the action of removing the saw is away from the animal's head.
      v. Carry long saws sheathed. Bend a saw into a horseshoe shape over an adequate sized load. Secure the saw to the center of the packsaddle with teeth facing the rear of the animal.
   c. Aircraft
      i. Fixed wing
         a. Properly sheathe the saw.
         b. Secure the saw from movement in a separate compartment, cargo bay behind net, or on the floor with tie-down straps.
      ii. Rotor wing
         c. Properly sheathe the saw.
         d. Secure the saw to the floor or in a net compartment.
         e. In an external cargo sling net, keep the saw straight and secured to a larger object.

[7] OSHA 1910.266 Appendix A

f. In an external basket, keep the saw properly secured with appropriate tie straps.

d. Personal transport

iii. Guard and balance the saw on your shoulder.

iv. Remove the rear handle.

v. Rest the saw over your shoulder with the teeth facing away from your neck.

vi. Carry the saw on the downhill side.

vii. Walk last in line if you are the person carrying the saw.

5. Operation
   a. Always inspect the saw before use.
   b. Use only saws that are properly set and sharpened.
   c. Wear cut-resistant gloves when handling a saw. Carefully sheathe and unsheathe the saw with the teeth facing away from your body .
   d. Pick up the saw with teeth away from your body. Rotate the teeth toward your body before handing the saw to another employee.
   e. When attaching handles, keep the teeth away from your body and secure a firm grip on the saw.
   f. Check and tighten screws in the handle of the saw as needed.
   g. Establish primary and secondary escape routes, safety zones, and alternates.
   h. Prior to cutting, remove vegetation. Clear the cutting area to provide firm, stable footing.
   i. When using a two-person crosscut saw for bucking, check that any employee placed downhill is in a safe position. If it is not certain that the downhill partner would be in a safe position, always single buck.
   j. When using a two-person crosscut saw, always predetermine who will remove the saw and the direction of the saw movement before starting the cut.
   k. Do not push the saw when beginning to cut.
   l. Do not reach across a moving saw.
   m. Maintain control and safe body position while sawing.
   n. Maintain communication with your partner at all times about holding wood, binds, limbs, and knots that might affect safety.
   o. When situations are unsafe, use alternate methods or terminate the task.

Chapter 4 Sawyer Safety Procedures

Saw operations include, but are not limited to, felling, bucking, brushing, limbing, and specialized uses. Sawyers have the obligation to say "NO" and walk away from any situation they determine to be an unacceptable risk.

4.1 Operational Safety

1. If the tree cannot be safely cut or does not need to be cut-leave it. **Saw only if safe.**

Consider other alternatives to hand felling if you are not comfortable with the assignment. See Appendix A for additional information.

2. Sawyers should not operate outside of their comfort zone and shall not operate outside of qualifications.
3. Personnel must be alert and physically capable before operating the saw.
4. Do not engage in saw operations when working alone except in emergencies. Follow guidelines as outlined in FSH 6709.11 22.48e.
5. Develop appropriate evacuation plans and provide appropriate first aid equipment at the work site.
6. Develop and hold safety briefings that address saw safety before beginning work projects or activities.
7. Provide immediate supervision for A Sawyers by a B or C Sawyer.
8. Maintain cutting area control to mitigate potential hazards. Space employees and organize their duties so they do not create hazards for others.
9. All work shall terminate and each employee shall move to a place of safety when environmental conditions, such as but not limited to, electrical storms, strong winds which may affect the fall of a tree, heavy rain or snow, extreme cold, dense fog, fires, mudslides, and darkness, create a hazard for the employee in the performance of the job[8].

4.2 Felling, Bucking, Brushing and Limbing Plans

Apply the following planning logic (OHLEC) to all phases of saw operations:

Objective

Regardless of task, develop a plan to determine where you want the cut piece to end up.

- If felling, plan the most desirable placement or lay for the tree
- If bucking, plan where you want the bucked log or round to go
- If limbing, determine sequence and direction for large branches when cut
- If brushing, particularly in thick brush, plan how you will remove the brush when it is cut

[8] (29 CFR 1910.266(d)(5))

Hazards/obstacles

Develop a plan to identify the hazards/obstacles:

- That are overhead (fire, rotten top, widow makers and loose bark)
- That are in the piece of wood being cut (fire, rot and hinge wood integrity, hollow, bar/saw length compared to diameter, bees or poison plants)
- Springpoles
- Buildings, equipment or other trees you don't want damaged
- That are associated with people and cutting area control

Leans/binds

Since lay, cut piece placement, sequence or removal was determined in O develop a plan to:

- Determine lean of a standing tree and calculate, in feet, the amount of head/back lean and side lean
- Determine binds in log to be bucked, springpoles, limbs or brush to be removed

Escape routes

Since leans and binds were determined in the previous step develop a plan to:

- Determine the 'good' and 'bad' side of the tree, log, springpole, limb or brush
- Determine and clear an escape route (or 2 routes if necessary for crosscut saw/axe work or situations that require two routes)

Cut Plan

Develop a cut plan to determine which technique will be used to remove wood fiber to achieve the desired result including:

- Face notch construction type (conventional, Humboldt or open face)
- Hinge position, length of hinge, depth of hinge and amount of stump shot needed
- Back cut type (straight in from the back or chase, boring back cut and out the back, boring back cut with release or holding wood or strap)
- Wedge placement including number of wedges and axe placement
- Sawyer communication to crew members, swamper or crosscut sawyer partner

4.3 Felling Process Specifics

1. Perform a Size up/Risk Assessment to Create a Felling Plan.

a. Consider the location of personnel, structures, power lines, other obstacles including roads, trails and other routes of travel in the cutting area.
b. Determine and plan for issues with tree characteristics and weather conditions (lean, overall soundness, widowmakers, spiked top and/or schoolmarm, burning top or portion of tree, moisture in the form of rain, snow, or ice) including problems with soundness or defects anywhere in the tree or trees that may be struck by the tree being felled.
c. Determine wind direction and velocity such as steady versus gusting and/or changing directions.
d. Know and understand the characteristics of the tree species, both live and dead.
e. Understand how the diameter, height and limb distribution of trees being felled or affected will react when cut.
f. Determine and plan for issues with surrounding terrain.
g. Considering all the information in items a. – g., determine the "good" and "bad" sides of the tree. While performing the rest of the falling operation make a conscious effort to stay on the "good" side of the tree to prevent becoming a "target".
h. Determine optimal felling direction, lay or bed.
i. Walk out and thoroughly check the intended lay or bed of the tree. Look for dead tree tops, missing tree tops, widowmakers, snags, and ground debris that may cause kickbacks, rolling, or result in another tree or limb becoming a hazard.
j. Identify an escape route that extends diagonally away from the expected felling line and always have an alternate escape route to a safety zone. Remember, the quadrant opposite the planned fall of the tree is one of the most dangerous.
k. Felling on any slope where rolling or sliding of trees or logs is reasonably foreseeable shall be done uphill from, or on the same level as, previously felled trees.
l. Always watch the top of the tree and any identified overhead hazards throughout the felling operation.
m. If you have to leave a partially cut or hung up tree, (because hazards are unusually significant) flag the area with danger tree or hazard tree flagging to later be removed by other methods or by someone with a higher skill level.

Consider other alternatives to hand felling if you are not comfortable with the assignment. See Appendix A for additional information.

2. Establish Cutting Area Control
   a. The sawyer (or lead sawyer of a crosscut saw team) is solely responsible for establishing cutting area control including communication plans with other personnel controlling access to the cutting site. For crosscut saw operations determine who will take the saw when exiting the cutting site as the tree commits.
   b. Make sure the felling operation never endangers nearby personnel.

c. Establish a secure felling area to the extent necessary; maintain a minimum 2 ½ tree length cutting area around tree being felled regardless of diameter[9].

3. Clear the worksite of vegetation and removable hazards
   a. Remove obstacles and clear vegetation at the base of the tree.
   b. Remove obstacles and clear vegetation in escape route(s), safety zone(s) and around trees or objects you plan to use to shield you once the tree commits to the fall.
   c. Remove obstacles and clear vegetation in lay if needed to prevent fly back of debris or uncontrolled movement of tree as it falls or once it meets the ground.
4. Make an Undercut
   a. An undercut shall be made in all trees 5" DBH and greater before making a back cut.
   b. Before initiating the undercut warn nearby personnel that a tree is about to fall.
   c. Start undercut from a location to minimize sawyer's exposure to overhead hazards.
   d. Use gunning sights on chain saw or saw handles on crosscut saw to aim the tree into the lay.
   e. Start the undercut at a comfortable level that provides adequate footing and balance throughout the cutting sequence.
   f. Make the undercut opening large enough to control the tree. Conventional, Humboldt, and Open-faced undercuts are all appropriate to use dependent on the situation encountered and the type of saw used.
   g. Maintain adequate hinge wood for the type of undercut used.
   h. Undercuts must meet cleanly and not cross one another (creating a Dutchman/bypass).
5. Making the Backcut and Wedging
   a. Properties of holding wood are dependent on tree species and condition.
   b. Before initiating the backcut, stop cutting, shut the saw off and warn nearby personnel that a tree is about to fall.
   c. The backcut shall leave sufficient hinge wood and stump shot based on the type of undercut used, tree diameter, tree species and wood fiber condition.
   d. Insert wedges into backcut kerf as necessary.
   e. Continue cutting until the desired amount of hinge wood is obtained.
   f. If wedging a tree over, observe how the top of the tree reacts to each blow to the wedge and recognize that widowmakers can be easily dislodged at any time.
6. Exiting Safely
   a. Exit the tree from the diagonal escape route to the safety zone, generally not less than 20 feet away.
   b. Do not cross behind the tree after the backcut has released the tree from the stump.
   c. As soon the tree commits to the fall, apply the chain brake and immediately proceed down the escape route to the chosen safety zone, shielding tree or obstacle. If using a crosscut saw, the predetermined sawyer takes the saw out of the cut and proceeds down the escape route.
   d. If carrying the saw down the escape route prevents you from escaping quickly, leave the saw at the stump.

[9] OSHA 29 CFR 1910.266(h)(1)(iv) - No employee shall approach a feller closer than two tree lengths of trees being felled until the feller has acknowledged that it is safe to do so, unless the employer demonstrates that a team of employees is necessary to manually fell a particular tree.

e. Remain in your safety zone and watch for overhead hazards, other trees, tops and limbs that may fall in an undetermined direction for at least 30 seconds after the tree hits the ground.
f. Give an "All Clear!" shout when it is safe for personnel to return to the cutting site.

7. Roadways, Trails, Utility Lines, and Firelines
   a. Use personnel as road guards on active travel routes within the cutting site. Establish additional traffic control measures, such as signs or barriers, to control traffic as needed.
   b. Do not cut trees within 2-½ tree lengths of utility lines unless utility companies have certified that lines are de-energized.
   c. If a tree contacts a utility line, keep personnel clear until utility companies certify it is safe to proceed.
8. Prohibitions
   a. Never leave a tree partially cut without flagging off a safety zone at least 2-1/2 times the height of the tree (or posting a guard) and arranging for removal by other methods or by someone with a higher skill level.
   b. Never climb a lodged tree. Flag off, notify nearby personnel and your immediate supervisor if the lodged tree presents a hazard.
   c. No felling shall take place when the top of the tree, intended lay and escape route are obscured by darkness, smoke, fog or other obstruction or when wind can affect the control of the fall of the tree.
   d. Domino felling.
   e. Pushing of trees while actively cutting.

4.4 Bucking, Brushing, and Limbing Process Specifics

1. The sawyer is responsible for cutting area control throughout the operation. Anticipate the log's reaction when severed during bucking. Evaluate and secure all areas down slope of the bucking site where a log could roll.
2. Select the bucking cut location based on evaluation of overhead hazards, side, top, bottom, end, and internal binds due to natural unevenness of the ground and objects, such as stumps, windfalls, and rocks.
3. Know where the tip of the chainsaw bar is at all times; beware of other logs, branches, or rocks immediately behind the area where you are bucking, brushing, or limbing for possible kickback potential or rocking of the chain. Be aware of the ground, rocks, or other obstacles that can dull or snag a crosscut saw or impeded safe sawing motion.
4. Plan and clear an escape route.
5. Remove limbs and brush before bucking. Exercise caution when cutting any tree held off the ground by its branches especially on hillsides where cutting branches could release the tree to roll downhill.
6. Walk on top of large downed logs while limbing (if possible) instead of working on the downhill side to prevent the log from rolling onto the sawyer.
7. Make bucking cuts slowly. Observe kerf closely to determine any movement and change bucking plan as appropriate.
8. Use wedges to prevent pinching chain saw bar or crosscut saw.
9. When trees on sloping ground are bucked, block them or specialized cuts/techniques that prevent bucked sections from rolling or sliding.

10. Always work from the uphill side unless tree is supported to prevent rolling. Always use **EXTREME CAUTION** when working on downhill side.
11. Buck windfalls only after examining each tree to be cut for strains, breaks, binds, and the chance of root wads falling, rolling, or setting upright when the weight of the tree is removed. Be aware of trees that are underneath the one you are bucking as they may be under pressure and could move in any direction when the overhead weight is removed.
12. Cut a sapling or branch (spring pole) that is bound down only when it is necessary. Make a series of small cuts on the compressed side of the sapling or branch to release the bind.

Chapter 5 Fireline/All Hazard Operations

Saw operations in any emergency response environment require constant attention to situational awareness, communication and work distances. Diligent supervision of sawyers and saw teams is required relative to the proximity of other personnel and fire ground hazards to assure the safety of all involved.

1. Fireline construction and post storm saw operations require saw teams to work in close proximity to one another; communication, whether spoken or hand signals, is critical to providing for a safe work environment.
2. All saw operations in the wildland fire and post storm environments involve elevated risk.

Consider other alternatives to hand felling if you are not comfortable with the assignment. **See Appendix A for additional information.**

3. During limbing and brushing swampers will stay outside of the "danger zone" of the sawyer. The "danger zone" is where the nose of the sawyer's bar can reach in any direction. Typically this zone is a 10-15' diameter circle around the sawyer.
4. Swampers should not hold material that is being cut.

Chapter 6 Saw-Related Accidents and Near Misses

1. Share near miss incidents with other sawyers or at an AAR.
2. Reviews of accidents involving saws must follow established procedures.
3. Saw Program Coordinators must be involved in investigations of saw accidents in their administrative unit.
4. Regional Saw Program Managers must be involved in investigations of all saw accidents in their region that result in serious injury or fatality.
5. The National Saw Program Manager must be involved in investigations of all saw accidents on NFS lands that result in serious injury or fatality.

Chapter 7 Program Monitoring and Evaluation

It is critical to monitor correct saw operation procedures by sawyers, Sawyer Instructors, and Sawyer Evaluators (FSM 2358.04h and 2358.04i) and assess trends in saw accidents, near misses, and changes in learning techniques. Saw program monitoring and evaluation may include the following:

1. Reviewing a sawyer's certification level and, if needed, training records to verify that the sawyer is cutting within the sawyer's certification level.
2. Reviewing a sawyer's felling methods, felling or bucking tools, escape routes, felling cuts and their relationship to each other, and other critical points of saw use.
3. Reviewing the use of PPE.
4. Reviewing JHAs and safety briefing records.
5. Taking corrective actions when unsafe practices are observed.
6. Reviewing supervision and instruction of sawyer trainees or sawyers.

7. Tracking the number of certified sawyers, Sawyer Evaluators, Sawyer Instructors, and completed saw-related projects and identifying trends in saw accidents and near misses.
8. Reporting results of monitoring and evaluation, including any recommendations, to the Saw Program Coordinator, Regional Saw Program Manager, or National Saw Program Manager, as appropriate.
9. Annually reviewing eSafety data associated with saw use to determine trends in saw accidents and possible corrective actions.
10. Reviewing recordkeeping procedures for currency and accuracy.

Appendix A – Danger Tree and Manual Felling Alternatives Information

"Danger Tree Indicators-Video"

"Visual Danger Tree Indicators-Poster"

"Danger Tree Mitigation Guidelines for Managers"

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How to Properly Refuse Risk, page 19

Hazard Tree Safety, page 22